

# Skywatchers

Newsletter of the China Lake Astronomical Society

M A R C H 3 R D , 2 0 2 5 C L A S M E E T I N G 7 : 3 0

Monday, March 03, 2025 7:00 PM

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## March 2025 Meeting & Program

Refreshments: 7:00 PM Announcements : 7:30 Program: 7:45

*Ralph Paonessa*

### Where Did All our Atoms and Elements Come From?

Atoms and elements are the building blocks of our bodies, the Earth, all matter — virtually everything we can touch and see!

As of this writing, there are 118 known elements. But they didn't always exist — and they didn't all form at the same time.

Could the ancient alchemists really turn lead into gold? Can physicists do it today?

From the earliest moments of the Big Bang to billions of years later, elements — and the atoms that comprise them — have come into existence in the Universe. Come to this program and discover the nature of atoms and elements, how they came into being, and how and where they're still forming today.

And discover what happened in the first 20 seconds after the Big Bang!

**Location**

**Maturango Museum**

Meetings and programs are open to the public, and are held at [Maturango Museum](#) on the first Monday of every month (or the following Monday for holidays).

## The Periodic Table of the Elements

**Legend:**

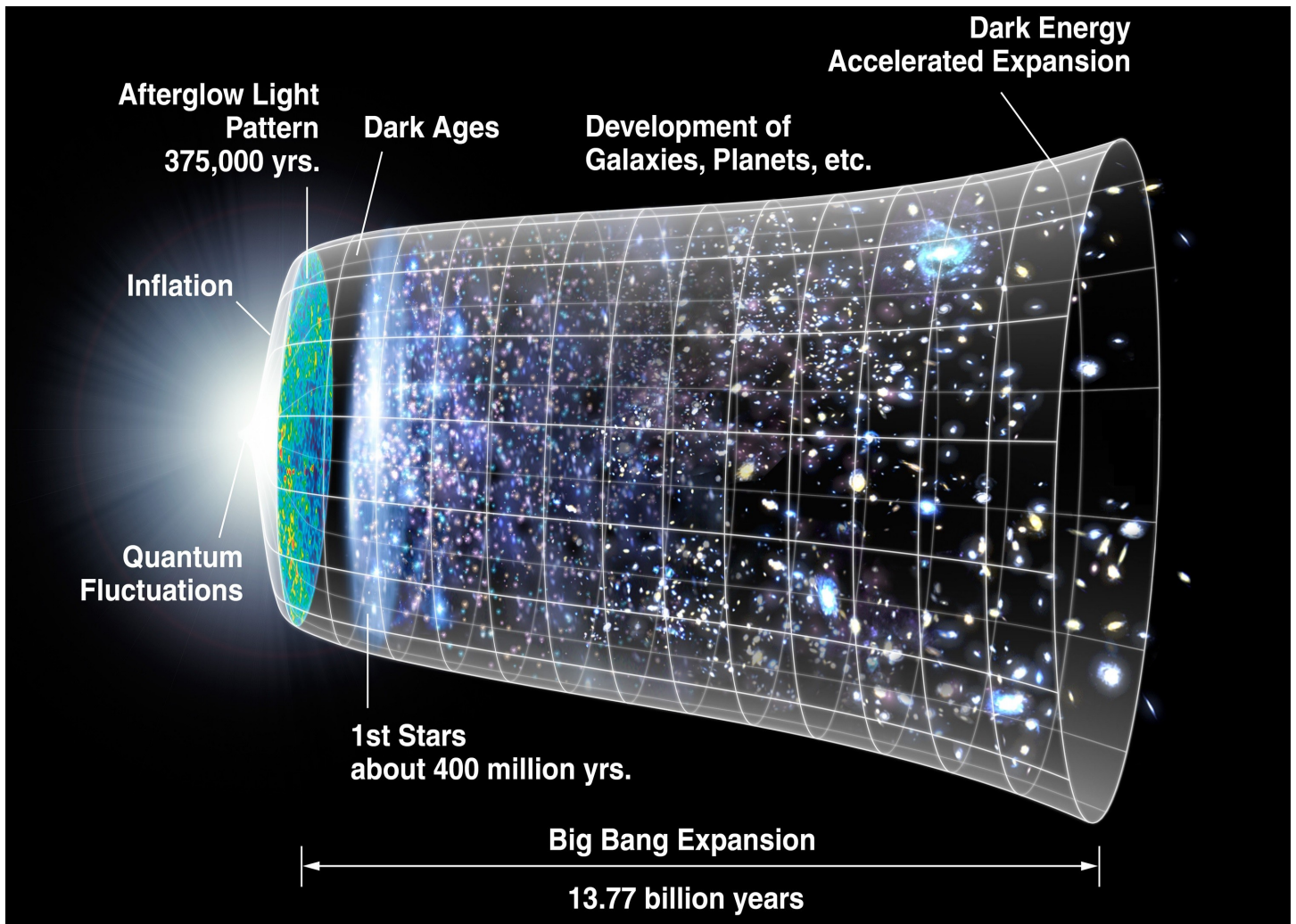
- alkali metals (orange)
- alkaline metals (yellow)
- other metals (light green)
- transition metals (green)
- lanthanoids (light blue)
- actinoids (dark blue)
- metalloids (light purple)
- nonmetals (purple)
- halogens (dark purple)
- noble gases (blue)
- unknown elements (grey)
- radioactive elements have masses in parenthesis

**Callout for Iron (Fe):**

- atomic mass: 55.845
- 1st ionization energy: 762.5 kJ/mol
- atomic number: 26
- electronegativity: 1.83
- chemical symbol: Fe
- name: Iron
- electron configuration: [Ar] 3d<sup>6</sup> 4s<sup>2</sup>
- oxidation states: +2, +3

**Notes:**

- as of yet, elements 113-118 have no official name designated by the IUPAC.
- 1 kJ/mol = 96.485 eV.
- all elements are implied to have an oxidation state of zero.



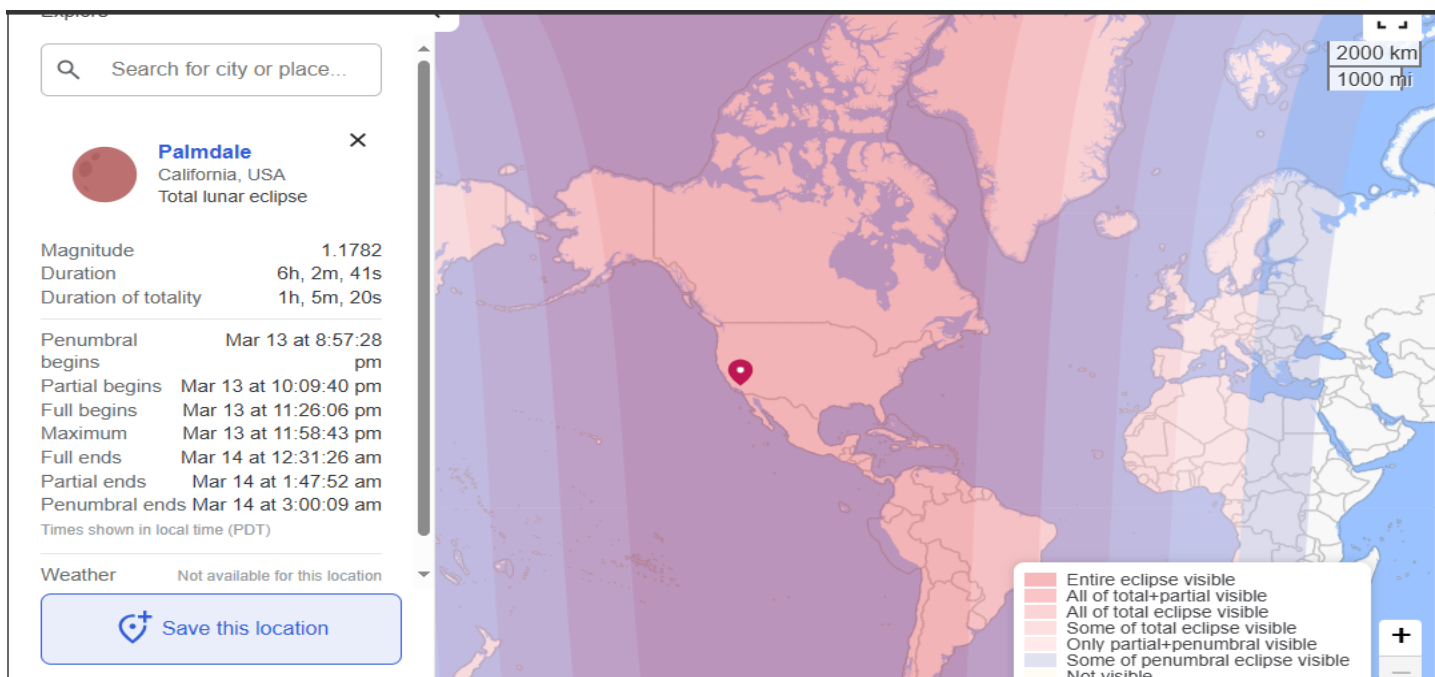
## [A total lunar eclipse will occur on March 13-14, 2025](#)

— the first on Earth since 2022 — but only the night side of the planet will get to see it. During this global event, which will occur at the same time across the world, the lunar surface will turn reddish for 65 minutes — a phenomenon often dubbed a "[blood moon](#)."

Although the point of greatest eclipse will be in the Pacific Ocean, North America and South America will get the best views. Some areas of Europe will get a slight view of the moonset, and East Asia will glimpse the spectacle at moonrise.

You can keep up with all the lunar eclipse action on our [lunar eclipse live blog](#). We will also stream the eclipse live on Space.com. More details on how to watch online will be released closer to the event.

Source:Space.com



### China Lake Astronomical Society Membership or Renewal 2025

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Yearly Membership \$ 25 (due in January) Family \$ 40 Youth 18 & under \$ 10.

Checks or Money Orders accepted \_\_\_\_\_

Contact Roger Brower 760-446-0454 (email [brower@iwvisp.com](mailto:brower@iwvisp.com))

Make Checks or Money Orders Payable to China Lake Astronomical Society.(CLAS)

**Roger Brower, Treasurer**  
**China Lake Astronomical Society**  
**P.O. Box 1783 Ridgecrest, Ca. 93556**

## Watch the asteroid that had us all worried zoom harmlessly through space (video)

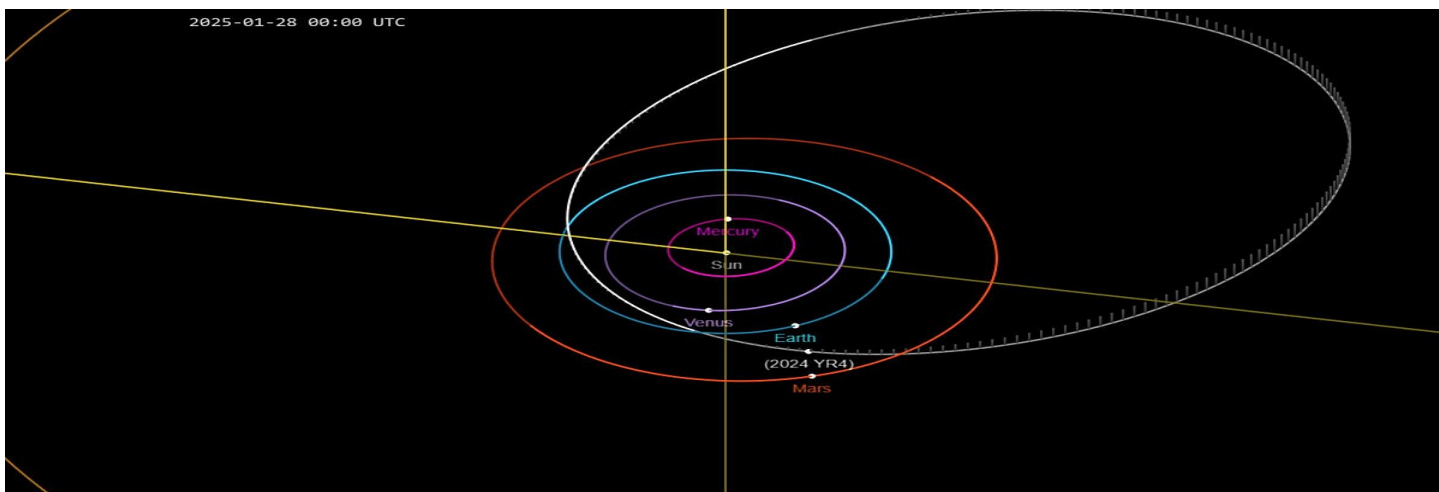
The potential risk of [Asteroid 2024 YR4](#) impacting Earth in 2032 dropped to nearly zero following new observations that helped better predict the asteroid's trajectory. Measuring about 131 to 295 feet (40 to 90 meters) wide, asteroid 2024 YR4 could have caused local devastation if it were to collide with our planet. But recent observations, including from the European Southern Observatory's (ESO) [Very Large Telescope \(VLT\)](#), reduced the asteroid's impact probability [to around 0.001%](#), after rising to [more than 3%](#) just last week — the highest impact probability ever recorded for an asteroid of this size. Source: [Watch the asteroid that had us all worried zoom harmlessly through space \(video\) | Space](#)

The ESO shared new videos showing the asteroid's path and possible locations on Dec. 22, 2032 in relation to Earth using new data from VLT observations collected on Feb. 20. The precise VLT observations, along with data collected by other observatories, allowed astronomers to more accurately model the asteroid's orbit and assess its impact probability, according to [a statement](#) from the observatory.

An asteroid's impact probability is expected to fluctuate as astronomers gain a better understanding of its path around [the sun](#). Following its initial discovery, continued observations have allowed astronomers to refine 2024 YR4's trajectory. However, studying the [asteroid](#) has been particularly challenging as it is moving away from Earth and has become increasingly faint and difficult to observe.

"Because of the uncertainties, the orbit of the asteroid is like the beam of a flashlight: getting broader and broader and fuzzier in the distance," Olivier Hainaut, an astronomer at the ESO said in the statement. "As we observe more, the beam becomes sharper and narrower. [Earth](#) was getting more illuminated by this beam: the probability of impact increased. The narrower beam is now moving away from Earth." Now, with a better understanding of the asteroid's orbit, astronomers have all but ruled out an impact with Earth in 2032,

and observations from the ESO's VLT have been crucial to gauging its [impact probability](#). The VLT is equipped with large mirrors and heightened sensitivity, which allows astronomers to see fainter objects farther into space. Located atop Cerro Paranal, an 8,645-foot-high (2,635 m) mountain in Chile's Atacama Desert, the VLT is also subject to clear, dark skies, enhancing its ability to track faint objects like 2024 YR4 and other potentially dangerous [near-Earth asteroids](#). However, the pristine conditions under which the VLT operates may be at risk with a [planned renewable energy project](#) just 7 miles (11 kilometers) from the telescope. AES Andes, a subsidiary of the U.S. power company AES Corporation, aims to build an industrial-scale green hydrogen project called Inna. The light pollution created by the industrial facilities would have significant impacts on the quality of the skies above the Paranal Observatory, astronomers argue, and would limit the VLT's ability to detect faint cosmic objects. "With that brighter sky, the VLT would lose the faint 2024 YR4 about one month earlier, which would make a huge difference in our capability to [predict an impact](#), and prepare mitigation measures to protect Earth," Hainaut said in the statement.





Puerto Rican sprite chaser Frankie Lucena noticed [the rare bolt](#) while he was browsing NASA's Gateway to Astronaut Photography of Earth. "I checked the ISS database for pictures before and after the event, and found that there were 4 photos in all," says Lucena. "I've animated them [here](#)."

Sometimes called "Earth's tallest lightning," because they reach [the ionosphere](#) more than 50 miles high, Gigantic Jets were discovered near Taiwan and Puerto Rico in 2001-2002. Since then, only dozens have been photographed. They seem to love storms over water and are famous for [surprising passengers](#) onboard commercial aircraft.

The nature of gigantic jets and their possible association with other types of [Transient Luminous Events](#) (TLEs) such as [blue jets](#) and [red sprites](#) remains an [active topic of research](#).

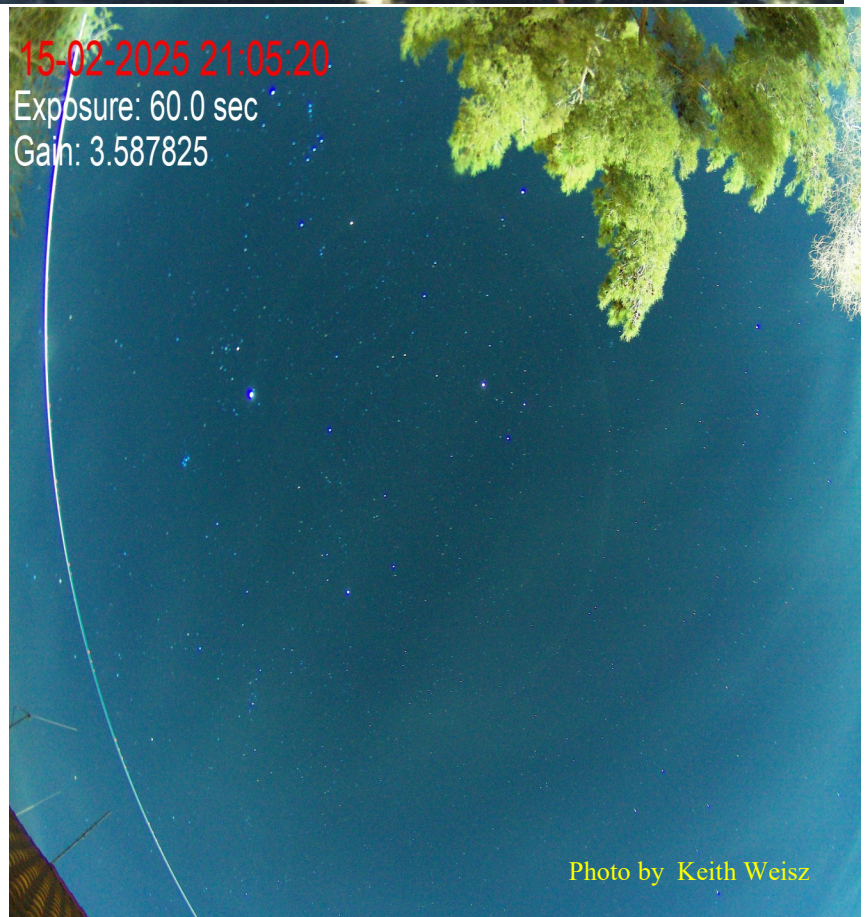


Photo by Keith Weisz

# The Evening Sky Map

FREE\* EACH MONTH FOR YOU TO EXPLORE, LEARN & ENJOY THE NIGHT SKY

**NORTHERN HEMISPHERE**  
**MARCH 2025**

**SKY MAP SHOWS HOW THE NIGHT SKY LOOKS**

**EARLY MAR 9 PM**  
**LATE MAR 8 PM**  
(Add 1 Hour for Daylight Saving)  
SKY MAP DRAWN FOR A LATITUDE OF 40° NORTH AND IS SUITABLE FOR LATITUDES UP TO 15° NORTH OR SOUTH OF THIS

## Sky Calendar - March 2025

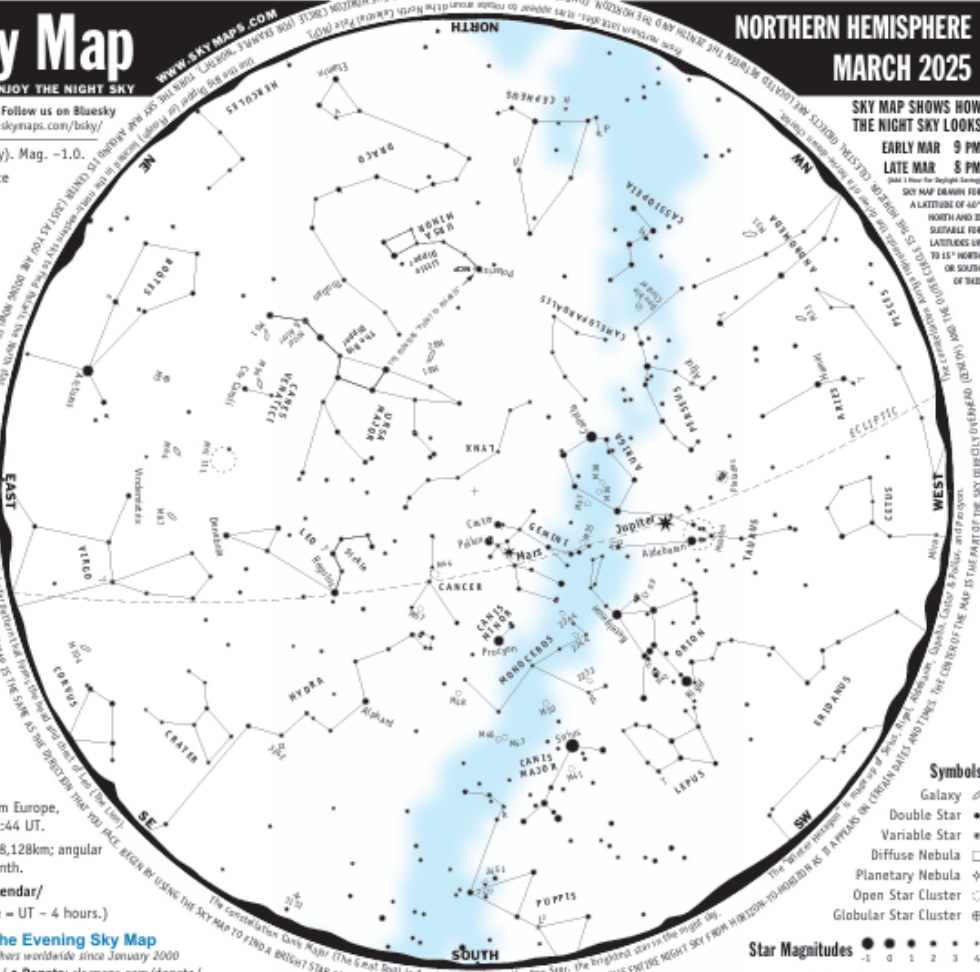
Follow us on Bluesky  
skymaps.com/blsky

- 1 Moon near Mercury at 5h UT (16° from Sun, evening sky). Mag. -1.0.
- 1 Moon at perigee (closest to Earth) at 21:20 UT (distance 361,964km; angular size 33.0').
- 2 Moon near Venus at 5h UT (evening sky). Mag. -4.6.
- 5 Moon near the Pleiades at 14h UT (evening sky).
- 6 Moon near Jupiter at 11h UT (evening sky). Mag. -2.3.
- 6 First Quarter Moon at 16:32 UT.
- 8 Mercury at easternmost elongation at 6h UT (18° from Sun, evening sky). Mag. -0.3.
- 9 Moon near Mars at 2h UT (evening sky). Mag. -0.1.
- 12 Moon near Regulus at 9h UT (evening sky).
- 14 Total Lunar Eclipse begins at 6:26 UT and ends at 7:31 UT. Greatest eclipse at 6:59 UT. Partial phases begin at 3:57 UT and end at 10:00 UT. During totality the Moon will appear red-orange in color once it passes into the Earth's shadow, the color of all the sunsets and sunrises in Earth's atmosphere. The total eclipse will be visible from the Pacific, Americas, west Europe and west Africa.
- 14 Full Moon at 6:55 UT.
- 16 Moon near Spica at 20h UT (morning sky).
- 17 Moon at apogee (farthest from Earth) at 17h UT (distance 405,754km; angular size 29.4').
- 20 Vernal equinox at 8:59 UT. The time when the Sun reaches the point along the ecliptic where it crosses into the northern celestial hemisphere marking the start of spring in the Northern Hemisphere and autumn in the Southern Hemisphere.
- 20 Moon near Antares at 17h UT (morning sky).
- 22 Last Quarter Moon at 11:31 UT.
- 29 New Moon at 10:59 UT. Start of lunation 1265.
- 29 Partial Solar Eclipse at 10:47 UT (greatest). Visible from Europe, NW Africa and northern Russia. Begins 8:51 UT. Ends 12:44 UT.
- 30 Moon at perigee (closest to Earth) at 5:21 UT (distance 358,128km; angular size 33.4'). The second time the Moon is at perigee this month.

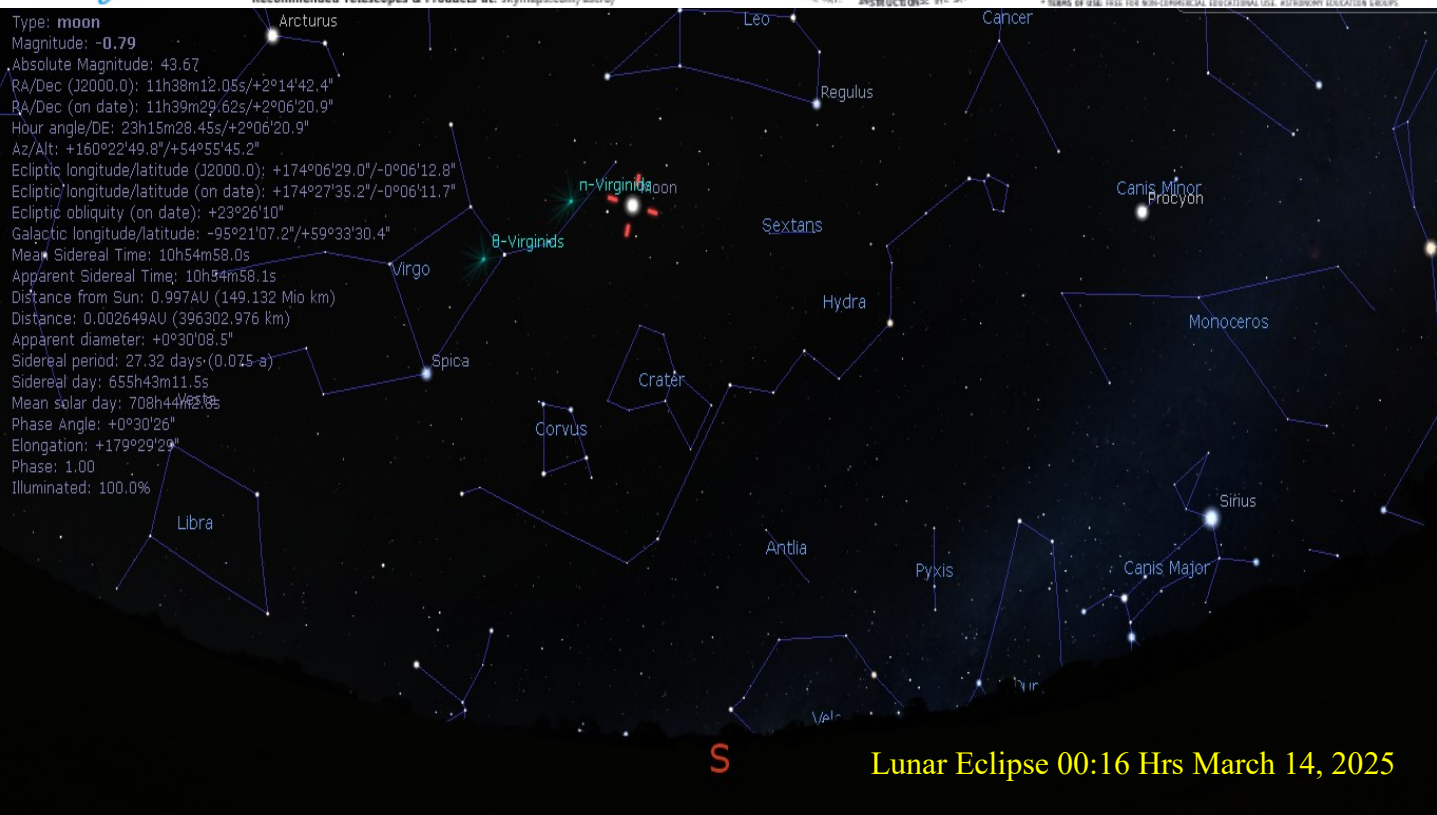
More sky events and links at <http://Skymaps.com/skycalendar/>  
All times in Universal Time (UT). (USA Eastern Summer Time = UT - 4 hours.)

### Help Support The Evening Sky Map

Freely shared with sky watchers worldwide since January 2000  
Shop: [skymaps.com/amazon/](http://skymaps.com/amazon/) • Donate: [skymaps.com/donate/](http://skymaps.com/donate/)  
Recommended Telescopes & Products at: [skymaps.com/astro/](http://skymaps.com/astro/)



- Symbols**
- Galaxy ☁
  - Double Star ★
  - Variable Star ☆
  - Diffuse Nebula ☁
  - Planetary Nebula ☄
  - Open Star Cluster ○
  - Globular Star Cluster ⊕
- Star Magnitudes**
- 1
  - 0
  - 1
  - 2
  - 3
  - 4



Type: moon  
Magnitude: -0.79  
Absolute Magnitude: 43.67  
RA/Dec (J2000.0): 11h38m12.05s/+2°14'42.4"  
RA/Dec (on date): 11h39m29.62s/+2°06'20.9"  
Hour angle/DE: 23h15m28.45s/+2°06'20.9"  
Az/Alt: +160°22'49.8"/+54°55'45.2"  
Ecliptic longitude/latitude (J2000.0): +174°06'29.0'/-0°06'12.8"  
Ecliptic longitude/latitude (on date): +174°27'35.2'/-0°06'11.7"  
Ecliptic obliquity (on date): +23°26'10"  
Galactic longitude/latitude: -95°21'07.2"/+59°33'30.4"  
Mean Sidereal Time: 10h54m58.0s  
Apparent Sidereal Time: 10h54m58.1s  
Distance from Sun: 0.997AU (149,132 Mio km)  
Distance: 0.002649AU (396302.976 km)  
Apparent diameter: +0°30'08.5"  
Sidereal period: 27.32 days (0.075-a)  
Sidereal day: 655h43m11.5s  
Mean solar day: 708h44m42.8s  
Phase Angle: +0°30'26"  
Elongation: +179°29'29"  
Phase: 1.00  
Illuminated: 100.0%

**S Lunar Eclipse 00:16 Hrs March 14, 2025**

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### About the Celestial Objects

Listed on this page are several of the brighter, more interesting celestial objects visible in the evening sky this month (refer to the monthly sky map). The objects are grouped into three categories. Those that can be easily seen with the naked eye (that is, without optical aid), those easily seen with binoculars, and those requiring a telescope to be appreciated. **Note, all of the objects (except single stars) will appear more impressive when viewed through a telescope or very large binoculars.** They are grouped in this way to highlight objects that can be seen using the optical equipment that may be available to the star gazer.

### Tips for Observing the Night Sky

When observing the night sky, and in particular deep-sky objects such as star clusters, nebulae, and galaxies, it's always best to observe from a dark location. Avoid direct light from street lights and other sources. If possible observe from a dark location away from the light pollution that surrounds many of today's large cities.

You will see more stars after your eyes adapt to the darkness—usually about 10 to 20 minutes after you go outside. Also, if you need to use a torch to view the sky map, cover the light bulb with red cellophane. This will preserve your dark vision.

Finally, even though the Moon is one of the most stunning objects to view through a telescope, its light is so bright that it brightens the sky and makes many of the fainter objects very difficult to see. So try to observe the evening sky on moonless nights around either New Moon or Last Quarter.

### Astronomical Glossary

**Conjunction** – An alignment of two celestial bodies such that they present the least angular separation as viewed from Earth.

**Constellation** – A defined area of the sky containing a star pattern.

**Diffuse Nebula** – A cloud of gas illuminated by nearby stars.

**Double Star** – Two stars that appear close to each other in the sky; either linked by gravity so that they orbit each other (binary star) or lying at different distances from Earth (optical double). Apparent separation of stars is given in seconds of arc (").

**Ecliptic** – The path of the Sun's center on the celestial sphere as seen from Earth.

**Elongation** – The angular separation of two celestial bodies. For Mercury and Venus the greatest elongation occurs when they are at their most angular distance from the Sun as viewed from Earth.

**Galaxy** – A mass of up to several billion stars held together by gravity.

**Globular Star Cluster** – A ball-shaped group of several thousand old stars.

**Light Year (ly)** – The distance a beam of light travels at 300,000 km/sec in one year.

**Magnitude** – The brightness of a celestial object as it appears in the sky.

**Open Star Cluster** – A group of tens or hundreds of relatively young stars.

**Opposition** – When a celestial body is opposite the Sun in the sky.

**Planetary Nebula** – The remnants of a shell of gas blown off by a star.

**Universal Time (UT)** – A time system used by astronomers. Also known as Greenwich Mean Time. USA Eastern Standard Time (for example, New York) is 5 hours behind UT.

**Variable Star** – A star that changes brightness over a period of time.

**NORTHERN HEMISPHERE**  
**MARCH 2025**  
**CELESTIAL OBJECTS**  


### Easily Seen with the Naked Eye

- Capella Aur • The 6th brightest star. Appears yellowish in color. Spectroscopic binary. Dist=42 ly.
- Arcturus Boo • Orange, giant K star. Name means "bear watcher". Dist=36.7 ly.
- Sirius CMa • The brightest star in the sky. Also known as the "Dog Star". Dist=8.6 ly.
- Procyon CMI • Greek name meaning "before the dog" - rises before Sirius (northern latitudes). Dist=11.4 ly.
- δ Cephei Cep • Cepheid prototype. Mag varies between 3.5 & 4.4 over 5,366 days. Mag 6 companion.
- Castor Gem • Multiple star system with 6 components. 3 stars visible in telescope. Dist=52 ly.
- Pollux Gem • With Castor, the twin sons of Leda in classical mythology. Dist=34 ly.
- Regulus Leo • Brightest star in Leo. A blue-white star with at least 1 companion. Dist=77 ly.
- Rigel Ori • The brightest star in Orion. Blue supergiant star with mag 7 companion. Dist=770 ly.
- Betelgeuse Ori • One of the largest red supergiant stars known. Diameter=300 times that of Sun. Dist=430 ly.
- Algol Per • Famous eclipsing binary star. Magnitude varies between 2.1 & 3.4 over 2,867 days.
- Pleiades Tau • The Seven Sisters. Spectacular cluster. Many more stars visible in binoculars. Dist=399 ly.
- Hyades Tau • Large V-shaped star cluster. Binoculars reveal many more stars. Dist=152 ly.
- Aldebaran Tau • Brightest star in Taurus. It is not associated with the Hyades star cluster. Dist=66.7 ly.
- Polaris UMI • The North Pole Star. A telescope reveals an unrelated mag 8 companion star. Dist=433 ly.

### Easily Seen with Binoculars

- M31 And ✓ The Andromeda Galaxy. Most distant object visible to naked eye. Dist=2.5 million ly.
- M38 Aur • Stars appear arranged in "pi" or cross shape. Dist=4,300 ly.
- M36 Aur • About half size of M38. Located in rich Milky Way star field. Dist=4,100 ly.
- M37 Aur • Very fine star cluster. Discovered by Messier in 1764. Dist=4,400 ly.
- M44 Cnc • Praesepe or Beehive Cluster. Visible to the naked eye. Dist=590±20 ly.
- M3 CVn • Easy to find in binoculars. Might be glimpsed with the naked eye.
- M41 CMa • First recorded observation by Aristotle in 325 BC as "cloudy spot". Dist=2,300 ly.
- Mel 111 Com • Coma Berenices. 80 mag 5-6 stars in 5 deg. Dist=288 ly. Age=400 million years.
- M35 Gem • Fine open cluster located near foot of the twin Castor. Dist=2,800 ly.
- M48 Hya • 12+ stars in 7x binoculars. Triangular asterism near centre. Dist=1,990 ly.
- γ Leporis Lep • Visible with binoculars. Gold & white stars. Mags 3.6 & 6.2. Dist=30 ly. Sep=96.3".
- 2232 Non • A large scattered star cluster of 20 stars. Dist=1,300 ly.
- 2244 Non • Surrounded by the rather faint Rosette Nebula. Dist=5,540 ly.
- M50 Non • Visible with binoculars. Telescope reveals individual stars. Dist=3,000 ly.
- Cr 69 Ori • Lambda Orionis Cluster. Dist=1,630 ly.
- M42 Ori • The Great Orion Nebula. Spectacular bright nebula. Best in telescope. Dist=1,300 light years.
- Double Cluster Per • Double Cluster in Perseus. NGC 869 & 884. Excellent in binoculars. Dist=7,300 ly.
- M47 Pup • Bright star cluster. 15+ stars in 7x binoculars. Dist=1,500 ly.
- M46 Pup • Dist=5,400 ly. Contains planetary NGC 2438 (Mag 11, d=65") - not associated.
- Mizar & Alcor UMa • Good eyesight or binoculars reveals 2 stars. Not a binary. Mizar has a mag 4 companion.

### Telescopic Objects

- γ Andromedae And • Attractive double star. Bright orange star with mag 5 blue companion. Sep=9.8".
- ε Boötis Boo • Red giant star (mag 2.5) with a blue-green mag 4.9 companion. Sep=2.8". Difficult to split.
- M67 Cnc • Contains 500+ stars mag 10 & fainter. One of the oldest clusters. Dist=2,350 ly.
- M94 CVn • Compact nearly face-on spiral galaxy. Dist=15 million ly.
- M51 CVn • Whirlpool Galaxy. First recognised to have spiral structure. Dist=25 million ly.
- η Cassiopeiae Cas • Yellow star mag 3.4 & orange star mag 7.5. Dist=119 ly. Orbit=480 years. Sep=12".
- M64 Com • Black-Eye Galaxy. Discovered by J.E. Bode in 1775 - "a small, nebulous star".
- 3242 Hya • Ghost of Jupiter. Bright blue disk. Mag 11 central star. Dist=2,600 ly.
- γ Leonis Leo • Superb pair of golden-yellow giant stars. Mags 2.2 & 3.5. Orbit=600 years. Sep=4.4".
- β Monocerotis Mon • Triple star. Mags 4.6, 5.0 & 5.4. Requires telescope to view arc-shape. Sep=7.3".
- 2264 Non • Christmas Tree Cluster. Associated with the Cone Nebula. Dist=2,450 ly.
- α Orionis Ori • Superb multiple star. 2 mag 7 stars one side, mag 9 star on other. Struve 761 triple in field.
- κ Puppis Pup • Telescope easily shows two blue-white stars of almost equal brightness. Sep=9.9".
- M1 Tau • Crab Nebula. Remnant from supernova which was visible in 1054. Dist=6,500 ly.
- M81 UMa • Beautiful spiral galaxy visible with binoculars. Easy to see in a telescope.
- M82 UMa • Close to M81 but much fainter and smaller.
- M87 Vir • Supergiant galaxy with supermassive black hole at its core. Dist=53.5 million ly.
- γ Virginis Vir • Superb pair of mag 3.5 yellow-white stars. Orbit=169 years. At their closest in 2005.

CHINA LAKE ASTRONOMICAL SOCIETY

## SKYWATCHER'S

NEWSLETTER

APRIL 1, 1965

## APRIL MEETING

Our next regular monthly meeting will be held at the clubhouse, 401 McIntire, at 7:30 p.m. on Monday evening, April 5. The program will consist of a series of slides (mostly in color) of astronomical objects. Various members of the club will each speak a few minutes about one of the slides. We had a similar meeting a year ago, and everyone seemed to enjoy it.

## CURT CHAFFIN TRANSFERS

It is with regret that we announce that Curt Chaffin, President of the China Lake Astronomical Society, has transferred to the Naval Ordnance Laboratory, Corona. We have suggested to him that he schedule two days for trips to N.O.T.S. on the first Monday of each month. Our constitution provides that the Vice-President takes over the duties of the Presidency. Thus, Carroll Evans is now President. The Executive Board of the Society is to appoint a new Vice-President to fill out the term. The Board has not yet filled the position, and suggestions from the membership are invited.

## MARS OBSERVED

On Thursday March 11, the Moon and Planet group of the Society met at the N.O.T.S. 10-inch reflector, to study Mars. It had been a rainy day, but it cleared up by evening and viewing was excellent. Nine members participated.

## CLUBHOUSE ACTIVITIES

Five more astronomical pictures from the Sky Publishing Corporation Sky Sets 1-3 have been mounted, behind glass, on the clubhouse walls. This completes the present plans for wall pictures.

## QUESTION OF THE MONTH

Is a celestial mechanic a person who fixes stars?



## March DAILY CELESTIAL CALENDAR

- 1 The Moon passes 1.6 deg north of Neptune, 1 A.M. PST
- 1 The Moon is at perigee (224,914 miles from Earth), 1:21 P.M. PST
- 1 The Moon passes 6 deg south of Venus, 3 P.M. PST
- 4 The Moon Passes 5 deg north of Uranus, 8 P.M. PST
- 6 The Moon passes 6 deg north of Jupiter, 4 A.M. PST
- 7 Mercury is at greatest eastern elongation (18 deg) 10 P.M. PST
- 8 The Moon passes 1.7 deg north of Mars, 4 P.M. PST
- 9 Mercury passes 6 deg south of Venus, 4 A.M. PST
- 12 Saturn is in conjunction with the Sun, 3 A.M. PST
- 14 Full Moon occurs at 11:55 P.M. PST (**Total Lunar Eclipse**)
- 14 Mercury is stationary, 2 P.M. PST
- 16 The Moon passes 0.4 deg south of Spica 1 P.M. PST
- 17 The Moon is at apogee (252,124 miles from Earth), 9:37 P.M. PST
- 19 Neptune is in conjunction with the Sun, 4 P.M. PST
- 20 Vernal Equinox occurs at 2:01 A.M. PST
- 20 The Moon passes 0.5 deg south of Antares, 10 P.M. PST
- 22 Last Quarter Moon occurs at 4:29 A.M. PST
- 22 Venus is in inferior conjunction, 6 P.M. PST
- 24 Mercury is in inferior conjunction, 1 P.M. PST
- 24 The Moon passes 0.9 deg south of Pluto, 2 P.M. PST
- 28 The Moon passes 0.9 deg south of Venus, 7 A.M. PST
- 29 New Moon occurs at 3:58 A.M. PST (**partial solar eclipse**)
- 30 The Moon is at perigee (222,530 miles from Earth), 10:25 PST
- 30 Venus passes 10 deg north of Saturn

## 2025 &amp; 2026 New Moons

- March 29, 2025
- April 27, 2025
- May 26, 2025
- June 25, 2025
- July 24, 2025
- August 22nd 2025
- September 21st 2025
- Oct 21st, 2025
- November 19th, 2025
- December 19th, 2025
- January 18th, 2026
- February 17th, 2026
- March 18th, 2026
- April 17th, 2026
- May 16th, 2026
- June 14th, 2026
- July 14th, 2026
- August 12th, 2026
- September 10th, 2026    Nov 08th, 2026
- October 10th, 2026    Dec 08th, 2026

10 **Star Parties for Red Rock Ricardo Station**

- *March 29th*
- *April 26th*
- *May 24th*
- *Sept 20th (Tentative Fall Schedule)*
- *Oct 18th (Tentative Fall Schedule)*
- *Nov 15th (Tentative Fall Schedule)*

**Brown Road Star Parties****Maturango Museum**

- *Quarter Moon Star March 8th 7 P.M.*

**C L U B   I N F O R M A T I O N****Monthly Skywatchers Newsletter.**

Our newsletter is sent by email once a month to those who have subscribed. You do not have to be a member. Subscribe at a meeting or online at [ChinaLakeAstro.org/subscribe](http://ChinaLakeAstro.org/subscribe)

**Annual Membership Dues**

- Individual \$25.00 per year.
- Family \$ 40
- Youth 18 & under \$10

**Officers**

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VICE-PRESIDENT – Keith Weisz

SECRETARY – Vacant

TREASURER – Roger Brower

NEWSLETTER EDITOR – Ted Hodgkinson    ghodkinson@sbcglobal.net

**Club Information**

Meetings of the China Lake Astronomical Society are held at the Maturango Museum 7:00 P.M. on the first Monday evening of each month, except when the first Monday is a holiday.

**WESTERN AMATEUR ASTRONOMERS WEB SITE** <http://www.waastro.org/>